



Credit Hours: 3

Contact Hours: This is a 3-credit course, offered in accelerated format. This means that 16 weeks of material is covered in 8 weeks. The exact number of hours per week that you can expect to spend on each course will vary based upon the weekly coursework, as well as your study style and preferences. You should plan to spend 14-20 hours per week in each course reading material, interacting on the discussion boards, writing papers, completing projects, and doing research.

COURSE DESCRIPTION AND OUTCOMES

Course Description:

This course provides students with skills to analyze data and apply concepts of statistical analysis and research in a business context. Students formulate conclusions from data using descriptive and inferential statistical methods and expand on knowledge of the underlying theory behind types of data, data sources, data organization, measures of central tendency and variation, probability, and probability distributions.

Course Overview:

This course provides a foundation for students to gain the ability to analyze data. Students will learn to draw conclusions from data using descriptive and inferential statistics methods. Through critical thinking exercises in problem solving using Excel, students will gain an understanding of the underlying theory behind topics such as types of data, various data sources, data organization, measures of central tendency and variation, probability, and probability distributions. The use of adaptive software to work assignments in each chapter will be utilized for mastery exercises as well as midterm and final exams.

The goal of this course is to provide students with a foundation from which they may gain the ability to analyze data and apply concepts of statistical analysis and research within a business context.

Cengage MindTap:

Cengage's MindTap is a web-based assignment and assessment solution required for this course. MindTap is designed to assist you with your coursework based on your needs. In this course you will link to and complete various MindTap activities associated with the course textbook. The weekly Opening and Mastery Exercises, as well as most of the Check Your Understanding activities are located in MindTap. These will correspond to the module chapter readings. While the Opening Exercise and Check Your Understanding scores are not recorded, the Mastery Exercise scores are graded and will be recorded by your instructor in the Grade Center.

In addition, both the midterm and final exam for this course are MindTap activities. Practice exams for both the midterm and final are available in MindTap as well.

Accessing Your Student Account

In order to use and benefit from the MindTap resources, you must first register. To activate your account, go to <https://www.cengage.com/services/product/mindtap/general/>

Access the Student Quick Start Guide for easy setup instructions.

If you have problems or concerns while registering or using MindTap, please contact Cengage's Support Team through <http://support.cengage.com>.

Course Learning Outcomes:

1. Apply statistics to problems in business and economics.
2. Summarize and perform statistical calculations with qualitative and quantitative data.
3. Explain and apply the basic factors of probability for decision making.
4. Describe probability distributions and analyze how they are used in decision-making.
5. Apply the concepts of sampling and inference and evaluate their use in decision making.
6. Apply population distribution and sample size to hypothesis testing.
7. Develop inferences about the differences between two population means and apply to decision-making.
8. Describe and explain the components of the simple linear regression model.

PARTICIPATION & ATTENDANCE

Prompt and consistent attendance in your online courses is essential for your success at CSU-Global Campus. Failure to verify your attendance within the first 7 days of this course may result in your withdrawal. If for some reason you would like to drop a course, please contact your advisor.

Online classes have deadlines, assignments, and participation requirements just like on-campus classes. Budget your time carefully and keep an open line of communication with your instructor. If you are having technical problems, problems with your assignments, or other problems that are impeding your progress, let your instructor know as soon as possible.

COURSE MATERIALS

Textbook information is located in the CSU-Global Booklist on the Student Portal.

COURSE SCHEDULE

Due Dates

The Academic Week at CSU-Global begins on Monday and ends the following Sunday.

- **Discussion Boards:** The original post must be completed by Thursday at 11:59 p.m. MT and Peer Responses posted by Sunday 11:59 p.m. MT. Late posts may not be awarded points.

- **Opening Exercises:** Take the opening exercise before reading each week's content to see which areas you will need to focus on. You may take these exercises as many times as you need. The opening exercises will not affect your final grade.
- **Mastery Exercises:** Students may take the quizzes a maximum of three times. In order to avoid a grade penalty, the quiz must be completed by the assigned due date. The highest score that you achieve will be recorded by your instructor in Schoology.
- **Exams:** Students take a midterm and final exam in this course. Practice exams are available in MindTap for both the midterm and final. The midterm and final exams will also be taken in MindTap. Students will have 3 attempts on the practice exams and 1 attempt on the midterm and final exams. As with the Mastery Exercises, if you do not do well on your first attempt at the review, it is highly recommended to go back and study the material for that module.
- **Critical Thinking:** Assignments are due Sunday at 11:59 p.m. MT.
- **Live Classroom:** Although participation is not required, Live Classroom sessions are held during weeks 1, 3, 5, and 7. There are four total sessions.

WEEKLY READING AND ASSIGNMENT DETAILS

Module 1

Readings

- Chapter 1 in *Essentials of Statistics for Business and Economics*

Opening Exercise (0 points)

Discussion (25 points)

Mastery Exercise (15 points)

Live Classroom (0 points)

Module 2

Readings

- Chapters 2 & 3 in *Essentials of Statistics for Business and Economics*

Opening Exercise (0 points)

Discussion (25 points)

Critical Thinking Assignment (90 points)

Choose one of the following two assignments to complete this week. Do *not* complete both assignments. Identify your assignment choice in the title of your submission. Note that while there are two options for the Critical Thinking Assignment, there is only one rubric. Review the rubric to confirm you are meeting the assignment requirements.

Option #1: Business Profits

The research firm LL Research collected data from 200 client businesses. They want to determine how the businesses compare among four variables:

2015 Profit in millions of dollars

2016 Profit in millions of dollars

2015-2016 Two-Year Change in Daily Average Customer Visits

Two-Year Average Number of Employees

Data collected for the sample of 200 businesses is contained in the file named **Businesses**, linked at the bottom of the page. Use all 200 data points.

Managerial Report

Prepare a report (see below) using the numerical methods of descriptive statistics presented in this module to learn how each of the variables contributes to the success of a client business. Be sure to include the following three items in your report.

1. Find descriptive sample statistics (mean, median, two quartiles Q1 and Q3, minimum, maximum, range, sample standard deviation, and coefficient of variation) for each of the four variables along with an explanation of what the descriptive statistics tell us about the client businesses.
2. Compute the percent change in profit from 2015 to 2016 for each business. Then use the z-score to determine which businesses were outliers with respect to percent change in profit.
3. Compute the sample correlation coefficient, showing the relationship between percent change in profit and each of the other two variables (2015-2016 Two-Year Change in Daily Average Customer Visits and Two-Year Average Number of Employees). Explain what the correlation coefficients tell us about the three pairs of relationships. Use tables, charts, or graphs to support your conclusions.

Write a report that adheres to the Written Assignment Requirements under the heading “Expectations for CSU-Global Written Assignments” found in the CSU-Global Guide to Writing and APA Requirements. As with all written assignments at CSU-Global, you should have in-text citations and a reference page. An example paper is provided in the *MTH410 Guide to Writing with Statistics*.

Submit your Excel file in addition to your report.

Requirements:

1. Paper must be written in third person.
2. Your paper should be four to five pages in length (counting the title page and references page) and cite and integrate at least one credible outside source. The CSU-Global Library is a great place to find resources.
3. Include a title page, introduction, body, conclusion, and a reference page.
4. The introduction should describe or summarize the topic or problem. It might discuss the importance of the topic or how it affects you or society as a whole, or it might discuss or describe the unique terminology associated with the topic.
5. The body of your paper should answer the questions posed in the problem. Explain how you approached and answered the question or solved the problem, and, for each question, show all steps involved. Be sure this is in paragraph format, not numbered answers like a homework assignment.
6. The conclusion should summarize your thoughts about what you have determined from the data and your analysis, often with a broader personal or societal perspective in mind. Nothing new should be introduced in the conclusion that was not previously discussed in the body paragraphs.
7. Include any tables of data or calculations, calculated values, and/or graphs associated with this problem in the body of your assignment.
8. Document formatting, citations, and style should conform to the CSU-Global Virtual Library CSU-Global Guide to Writing and APA: Introduction. A short summary containing much that you need to know about paper formatting, citations, and references is contained in the New Sample APA

Paper. In addition, information in the CSU-Global Virtual Library under the Writing Center/APA Resources tab has many helpful areas (Writing Center, Writing Tips, Template & Examples/Papers & Essays, and others).

Option #2: Call Times

Call International oversees the quality of 200 call centers throughout the world. They want to determine how the centers compare among four variables for the most recent year:

Shift A Average Call Time (in minutes)

Shift B Average Call Time (in minutes)

Average Customer Satisfaction Level (on a 4-point scale: 1=poor, 2=average, 2=good, 3=excellent)

Average Number of Employees

Data collected for the sample of 200 Call Centers is contained in the file named **Call Centers** linked at the bottom of the page. Use all 200 data points.

Managerial Report

Prepare a report (see below) using the numerical methods of descriptive statistics presented in this module to learn how the variables contribute to the success of a call center. Be sure to include the following three items in your report.

1. Find descriptive sample statistics (mean, median, range, the two quartiles Q1 and Q3, minimum, maximum, sample standard deviation, and coefficient of variation) for each of the four variables, along with an explanation of what the descriptive statistics tell us about the call centers.
2. Use the z-score to determine which call centers, if any, should be considered outliers in each of the four variables. If there are any outliers in any category, please list them and state for which category they are an outlier.
3. Compute the sample correlation coefficient, showing the relationship between Satisfaction Level and each of the other three variables (Shift A Average Call time, Shift B Average Call Time, Average Number of Employees). Explain what the correlation coefficients tell us about the three pairs of relationships. Use tables, charts, or graphs to support your conclusions.

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5. The body of your paper should answer the questions posed in the problem. Explain how you approached and answered the question or solved the problem, and, for each question, show all steps involved. Be sure this is in paragraph format, not numbered answers like a homework assignment.
6. The conclusion should summarize your thoughts about what you have determined from the data and your analysis, often with a broader personal or societal perspective in mind. Nothing new should be introduced in the conclusion that was not previously discussed in the body paragraphs.
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Mastery Exercise (15 points)

Module 3

Readings

- Chapter 4 in *Essentials of Statistics for Business and Economics*

Opening Exercise (0 points)

Discussion (25 points)

Mastery Exercise (15 points)

Live Classroom (0 points)

Module 4

Readings

- Chapters 5 & 6 in *Essentials of Statistics for Business and Economics*

Opening Exercise (0 points)

Discussion (25 points)

Critical Thinking Assignment (70 points)

Choose one of the following two assignments to complete this week. Do *not* complete both assignments. Identify your assignment choice in the title of your submission. Note that while there are two options for the Critical Thinking Assignment, there is only one rubric. Review the rubric to confirm you are meeting the assignment requirements.

Option #1: Batting

The batting average of a baseball player is the number of “hits” divided by the number of “at-bats.” Recently, a certain major league player’s at-bats and corresponding hits were recorded for 200 consecutive games. The consecutive games span more than one season. Since each game is different, the number of at-bats and hits both vary. For this particular player, there were from zero to five at-bats. Thus, one can sort the 200 games into six categories:

- 0 at-bats
- 1 at-bat
- 2 at-bats
- 3 at-bats
- 4 at-bats
- 5 at-bats

Consider the games where the player had exactly four at-bats. A similar analysis can be done for each of the other at-bats category. Download the file titled Bats. It contains a scatter plot of the four at-bats number of hits versus frequency. To compare the results to the Binomial Distribution, complete the following:

1. Explain why the four at-bats is a binomial experiment.
2. Using the Bats scatter plot, construct a frequency distribution for the number of hits.
3. Compute the mean number of hits. The formula for the mean is $\frac{\sum x_i f_i}{\sum f_i}$.
 - Here, x_i represent no. of hits (0, 1, 2, 3, 4) and f_i is the corresponding frequency. Explain what the numerical result means.
4. From the frequency distribution, construct the corresponding probability distribution. Explain why it is a probability distribution. Then, use Excel to make a scatter plot of the probability distribution:
Select the two columns of the probability distribution. Click on INSERT, and then go to the Charts area and select Scatter. Then choose the first Scatter chart (the one without lines connecting).
5. Using the frequency distribution, what is the player's batting average for four at-hits? In part 3, note that the numerator in the formula for the mean is the total number of hits. The total number of at-bats is the denominator of the formula for the mean multiplied by 4.
6. The Binomial Distribution is uniquely determined by n , the number of trials, and p , the probability of "success" on each trial. Using Excel, construct the Binomial Probability Distribution for four trials, n , and probability of success, p , as the batting average in part 5. Here is an explanation of the BINOM.DIST function in Excel:
<https://support.office.com/en-ie/article/BINOM-DIST-function-c5ae37b6-f39c-4be2-94c2-509a1480770c?ui=en-US&rs=en-IE&ad=I>
 - For example, In Excel
=BINOM.DIST(7,15,0.7, FALSE)
represents the probability of 7 successes out of 15 (n) trials. The 0.7 is the probability of success, p .
7. Using the formula for the mean of the binomial distribution, what is the mean number of successes in part 6 up above?
8. In Excel, make a scatter plot for the binomial distribution. The instructions for making one are in part 4 up above.
9. Use the results up above to compare the probability distribution of four at bats and the Binomial Distribution. Compare the means in parts 4 and 6, too. If the probability distribution of 4 at bats and the Binomial Distribution differ, explain why that is so.

Write a report that adheres to the Written Assignment Requirements under the heading "Expectations for CSU-Global Written Assignments" found in the CSU-Global Guide to Writing and APA Requirements. As with all written assignments at CSU-Global, you should have in-text citations and a reference page. An example paper is provided in the *MTH410 Guide to Writing with Statistics*.

Submit your Excel file in addition to your report.

Requirements:

1. Paper must be written in third person.
2. Your paper should be four to five pages in length (counting the title page and references page) and cite and integrate at least one credible outside source. The CSU-Global Library is a great place to find resources.
3. Include a title page, introduction, body, conclusion, and a reference page.
4. The introduction should describe or summarize the topic or problem. It might discuss the importance of the topic or how it affects you or society as a whole, or it might discuss or describe the unique terminology associated with the topic.
5. The body of your paper should answer the questions posed in the problem. Explain how you approached and answered the question or solved the problem, and, for each question, show all steps involved. Be sure this is in paragraph format, not numbered answers like a homework assignment.
6. The conclusion should summarize your thoughts about what you have determined from the data and your analysis, often with a broader personal or societal perspective in mind. Nothing new should be introduced in the conclusion that was not previously discussed in the body paragraphs.
7. Include any tables of data or calculations, calculated values, and/or graphs associated with this problem in the body of your assignment.
8. Document formatting, citations, and style should conform to the CSU-Global Virtual Library CSU-Global Guide to Writing and APA: Introduction. A short summary containing much that you need to know about paper formatting, citations, and references is contained in the New Sample APA Paper. In addition, information in the CSU-Global Virtual Library under the Writing Center/APA Resources tab has many helpful areas (Writing Center, Writing Tips, Template & Examples/Papers & Essays, and others).

Option #2: Hockey

The success average of a hockey player is the number of “points scored” divided by the number of “shots on goal.” Recently, a certain professional league player’s shots on goal and corresponding points scored were recorded for 400 consecutive games. The consecutive games span more than one season. Since each game is different, the number of shots and points scored both vary. For this particular player, there were from 0 to 15 shots. Thus, one can sort the more than 400 games into 16 categories:

0 shots
1 shot
2 shots
.
.
.
14 shots
15 shots

Consider the games where the player had exactly five shots on goal. A similar analysis can be done for each of the other shots category. Download the file titled Hockey. It contains a scatter plot of the Five Shots number of successes versus frequency. To compare the results to the Binomial Distribution, complete the following:

1. Explain why the five shots is a binomial experiment.
2. Using the Hockey scatter plot, construct a frequency distribution for the number of successes.

3. Compute the mean number of successes. The formula for the mean is $\frac{\sum x_i \cdot f_i}{\sum f_i}$.
 - Here, x_i represent no. of successes (0, 1, 2, 3, 4) and f_i is the corresponding frequency. Explain what the numerical result means.
4. From the frequency distribution, construct the corresponding probability distribution. Explain why it is a probability distribution. Then, use Excel to make a scatter plot of the probability distribution:
Select the two columns of the probability distribution. Click on INSERT, and then go to the Charts area and select Scatter. Then choose the first Scatter chart (the one without lines connecting).
5. Using the frequency distribution, what is the player's success average for five shots? In part 3, note that the numerator in the formula for the mean is the total number of successes. The total number of shots is the denominator of the formula for the mean multiplied by 4.
6. The Binomial Distribution is uniquely determined by n , the number of trials, and p , the probability of "success" on each trial. Using Excel, construct the Binomial Probability Distribution for five trials, n , and probability of success, p , as the success average in part 5. Here is an explanation of the BINOM.DIST function in Excel
<https://support.office.com/en-ie/article/BINOM-DIST-function-c5ae37b6-f39c-4be2-94c2-509a1480770c?ui=en-US&rs=en-IE&ad=I>
 - For example, In Excel
=BINOM.DIST(7,15,0.7,FALSE)
represents the probability of 7 successes out of 15 (n) trials. The 0.7 is the probability of success, p .
7. Using the formula for the mean of the binomial distribution, what is the mean number of successes in part 6 up above?
8. In Excel, make a scatter plot for the binomial distribution. The instructions for making one are in part 4 up above.
9. Use the results up above to compare the probability distribution of five shots and the Binomial Distribution. Compare the means in parts 4 and 6, too. If the probability distribution of five shots and the Binomial Distribution differ, explain why that is so.

Write a report that adheres to the Written Assignment Requirements under the heading "Expectations for CSU-Global Written Assignments" found in the CSU-Global Guide to Writing and APA Requirements. As with all written assignments at CSU-Global, you should have in-text citations and a reference page. An example paper is provided in the *MTH410 Guide to Writing with Statistics*.

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5. The body of your paper should answer the questions posed in the problem. Explain how you approached and answered the question or solved the problem, and, for each question, show all steps involved. Be sure this is in paragraph format, not numbered answers like a homework assignment.

6. The conclusion should summarize your thoughts about what you have determined from the data and your analysis, often with a broader personal or societal perspective in mind. Nothing new should be introduced in the conclusion that was not previously discussed in the body paragraphs.
7. Include any tables of data or calculations, calculated values, and/or graphs associated with this problem in the body of your assignment.
8. Document formatting, citations, and style should conform to the CSU-Global Virtual Library CSU-Global Guide to Writing and APA: Introduction. A short summary containing much that you need to know about paper formatting, citations, and references is contained in the New Sample APA Paper. In addition, information in the CSU-Global Virtual Library under the Writing Center/APA Resources tab has many helpful areas (Writing Center, Writing Tips, Template & Examples/Papers & Essays, and others).

Mastery Exercise (15 points)

Midterm Exam (140 points)

Module 5

Readings

- Chapters 7 & 8 in *Essentials of Statistics for Business and Economics*

Opening Exercise (0 points)

Discussion (25 points)

Critical Thinking Assignment (90 points)

Choose one of the following two assignments to complete this week. Do *not* complete both assignments. Identify your assignment choice in the title of your submission. Note that while there are two options for the Critical Thinking Assignment, there is only one rubric. Review the rubric to confirm you are meeting the assignment requirements.

Option #1: Cars

An expert who works for a car magazine obtained random data (rounded to the nearest thousand) among two categories of used or new cars:

Domestic
Foreign

The expert would like to understand sales based on list price (rounded to the nearest thousand dollars), sale price (rounded to the nearest thousand dollars), and number of days it takes to sell each car. The complete data set is in the file named Cars.

Managerial Report

Prepare a report (see below) that summarizes your assessment of the nature of the car market. Be sure to include the following *seven items* in your report.

1. Descriptive statistics (mean, median, range, standard deviation, and coefficient of variation) to summarize each of the three variables for the all Domestic cars. Use z-scores to determine if

- there any outliers in the data set for any of the three variables. If there are any outliers in any category, please list them and state for which category they are an outlier. If a result is an outlier, state whether it is below or above the mean.
2. Descriptive statistics (mean, median, range, standard deviation, and coefficient of variation) to summarize each of the three variables for the all Foreign cars. Use z-scores to determine if there any outliers in the data set for any of the three variables. If there are any outliers in any category, please list them and state for which category they are an outlier. If a result is an outlier, state whether it is below or above the mean.
 3. Compare your summary results from #1 and #2. Discuss any specific statistical results that would help the car expert understand the car market.
 4. Develop a 98% confidence interval estimate of the population mean sales price and population mean number of days to sell for Domestic cars. What is the Margin of error? Interpret your results.
 5. Develop a 98% confidence interval estimate of the population mean sales price and population mean number of days to sell for Foreign cars. What is the Margin of error? Interpret your results.
 6. Assume the car expert requested estimates of the mean number of days to sell for the Domestic cars with a margin of error of seven days and the mean selling price of Foreign cars with a margin of error of eight days. Using 98% confidence, how large should the sample sizes be for each?
 7. Suppose a Domestic car has a list price of \$30,000 and a Foreign car has a list price of \$30,000. What is your estimate of the final selling price (based on the percent difference for the sale and list price) and number of days required to sell each of these cars?

Write a report that adheres to the Written Assignment Requirements under the heading "Expectations for CSU-Global Written Assignments" found in the CSU-Global Guide to Writing and APA Requirements. As with all written assignments at CSU-Global, you should have in-text citations and a reference page. An example paper is provided in the *MTH410 Guide to Writing with Statistics*.

Submit your Excel file in addition to your report.

Requirements:

1. Paper must be written in third person.
2. Your paper should be four to five pages in length (counting the title page and references page) and cite and integrate at least one credible outside source. The CSU-Global Library is a great place to find resources.
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6. The conclusion should summarize your thoughts about what you have determined from the data and your analysis, often with a broader personal or societal perspective in mind. Nothing new should be introduced in the conclusion that was not previously discussed in the body paragraphs.
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Option #2: Finer Suits

Finer Suit Company sells suits in the US and the European Union. The company monitors its suit sales by collecting randomly chosen data from store locations throughout the US. They record list price (in dollars), sale price (in dollars), and number of days it takes to sell each suit. Data was collected from 200 suits sold in the US and 200 in the EU region. The complete data set is in the file named Suits.

Managerial Report

Prepare a report (see below) that summarizes your assessment of the nature of the suit market in each region. Be sure to include the following *seven items* in your report.

1. Descriptive statistics (mean, median, range, standard deviation, and coefficient of variation) to summarize each of the three variables for the all US suits. Use z-scores to determine if there any outliers in the data set for any of the three variables. If there are any outliers in any category, please list them and state for which category they are an outlier. If a result is an outlier, state whether it is below or above the mean.
2. Descriptive statistics (mean, median, range, standard deviation and coefficient of variation) to summarize each of the three variables for the all EU suits. Use z-scores to determine if there any outliers in the data set for any of the three variables. If there are any outliers in any category, please list them and state for which category they are an outlier. If a result is an outlier, state whether it is below or above the mean.
3. Compare your summary results from #1 and #2. Discuss any specific statistical results that would help Finer Suits understand its business.
4. Develop a 99% confidence interval estimate of the population mean sales price and population mean number of days to sell for US suits. What is the Margin of error? Interpret your results.
5. Develop a 99% confidence interval estimate of the population mean sales price and population mean number of days to sell for EU suits. What is the Margin of error? Interpret your results.
6. Assume the Finer Suit Company requested estimates of the mean List Price for the US suits with a margin of error of \$600 and the mean List Price of EU suits with a margin of error of \$600. Using 99% confidence, how large should the sample sizes be for each?
7. Suppose a US suit has a list price of \$1,500 and a EU suit has a list price of \$1,200. What is your estimate of the final selling price (based on the percent difference for the sale and list price) and number of days required to sell each of these suits?

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Mastery Exercise (15 points)

Live Classroom (0 points)

Module 6

Readings

- Chapter 9 in *Essentials of Statistics for Business and Economics*

Opening Exercise (0 points)

Discussion (25 points)

Critical Thinking Assignment (90 points)

Choose one of the following two assignments. Identify your assignment choice in the title of your submission. Note that, while there are two options for the Critical Thinking Assignment, there is only one rubric. Review the rubric to confirm you are meeting the assignment requirements.

Option #1: Quality at A1 Hotels

A1 Hotels operates luxury hotels throughout the world. Recently, motivated by some incidents that appeared in the news, they have been concerned about the quality of service. The company has been giving the following survey to its clients after their stay:

1. **How would you rate the quality of your room? Select one.**
Good(G), Poor(P)

2. How would you rate the quality of your food? Select one.

Good(G), Poor(P)

3. How would you rate the quality of your service? Select one.

Good (G), Poor(P)

Any customer who answered “Poor” to at least one of the three questions up above is considered to be “dissatisfied.” Traditionally, 40% of customers have been dissatisfied.

A1 Hotels would like to see if the recent level of customer satisfaction has changed. Therefore, 200 survey responses were recently chosen at random for analysis. The complete data set is in the file named Hotels.

Managerial Report

Prepare a report (see below) for A1 Hotels that summarizes your assessment of customer satisfaction. Be sure to include the following *seven items* in your report.

1. To summarize the data, compute the proportion of all clients that
 - a. Answered “Poor” to room quality.
 - b. Answered “Poor” to food quality.
 - c. Answered “Poor” to service quality.
2. Develop the 92% confidence interval for the proportion of all recent clients that were “dissatisfied.”
3. Develop the 92% confidence interval for the proportion of all recent clients who answered “Poor” to room quality.
4. Develop the 92% confidence interval for the proportion of all recent clients who answered “Poor” to food quality.
5. Develop the 92% confidence interval for the proportion of all recent clients who answered “Poor” to service quality.
6. Conduct a hypothesis test (using either the p-Value Approach or the Critical Value Approach) to determine if the proportion of all recent clients is more dissatisfied than the traditional level of dissatisfaction. Use $\alpha = 0.08$. Do not forget to include the correctly worded hypotheses and show all the steps required to conduct the hypothesis test.
7. What advice would you give to A1 Hotels based upon your analysis of the data? What is the magnitude of the issue? How can this study be improved?

Write a report that adheres to the Written Assignment Requirements under the heading “Expectations for CSU-Global Written Assignments” found in the [CSU-Global Guide to Writing and APA Requirements](#). As with all written assignments at CSU-Global, you should have in-text citations and a reference page. An example paper is provided in the *MTH410 Guide to Writing with Statistics*.

Submit your Excel file in addition to your report.

Requirements:

1. Paper must be written in third person.
2. Your paper should be four to five pages in length (counting the title page and references page) and cite and integrate at least one credible outside source. The CSU-Global Library is a great place to find resources.
3. Include a title page, introduction, body, conclusion, and a reference page.

4. The introduction should describe or summarize the topic or problem. It might discuss the importance of the topic or how it affects you or society as a whole, or it might discuss or describe the unique terminology associated with the topic.
5. The body of your paper should answer the questions posed in the problem. Explain how you approached and answered the question or solved the problem, and, for each question, show all steps involved. Be sure this is in paragraph format, not numbered answers like a homework assignment.
6. The conclusion should summarize your thoughts about what you have determined from the data and your analysis, often with a broader personal or societal perspective in mind. Nothing new should be introduced in the conclusion that was not previously discussed in the body paragraphs.
7. Include any tables of data or calculations, calculated values, and/or graphs associated with this problem in the body of your assignment.
8. Document formatting, citations, and style should conform to the CSU-Global Virtual Library CSU-Global Guide to Writing and APA: Introduction. A short summary containing much that you need to know about paper formatting, citations, and references is contained in the New Sample APA Paper. In addition, information in the CSU-Global Virtual Library under the Writing Center/APA Resources tab has many helpful areas (Writing Center, Writing Tips, Template & Examples/Papers & Essays, and others).

Option #2: Quality of Cerámica América Sinks

Cerámica América makes both commercial and home sinks, toilets, and tile throughout Latin America. There have been many complaints that its commercial sinks are of poor quality. Recently, a new type of home sink, Modelo Americano, has been developed. The company hopes that this new model is of better quality. Quality Control tests sinks using the following three tests:

1. **Cracked or Chipped Ceramic:**
Pass (P) or Fail (F)
2. **Glaze Quality:**
Pass (P) or Fail (F)
3. **Stress Test**
Pass (P) or Fail (F)

A sink gets a "Passing" grade if it passes all three of the above. Traditionally, 85% of its commercial sinks have gotten a "Passing" grade. Cerámica América would like to see if its passing rate is better than the traditional rate. Recently, 200 Modelo Americano sinks were randomly chosen from its manufacturing plants. The complete data set is in the file named Sinks.

Managerial Report

Prepare a report (see below) for Cerámica América that summarizes your assessment of its Modelo Americano sinks. Be sure to include the following *seven items* in your report.

1. To summarize the data, compute the proportion of all sinks that
 - a. "Passed" the Cracked or Chipped test.
 - b. "Passed" the Glaze Quality test.
 - c. "Passed" the Stress Test.

2. Develop the 98% confidence interval for the proportion of all Modelo Americano sinks that got a “Passing” grade.
3. Develop the 98% confidence interval for the proportion of all Modelo Americano sinks that passed the Cracked or Chipped test.
4. Develop the 98% confidence interval for the proportion of all Modelo Americano sinks that passed the Glaze Quality test.
5. Develop the 98% confidence interval for the proportion of all Modelo Americano sinks that passed the Stress Test.
6. Conduct a hypothesis test (using either the p-Value Approach or the Critical Value Approach) to determine if the proportion of all Modelo Americano sinks that get a “Passing” grade is larger than the traditional “Passing” rate. Use $\alpha = 0.02$. Do not forget to include the correctly worded hypotheses and show all the steps required to conduct the hypothesis test.
7. What advice would you give to Cerámica América based upon your analysis of the data? What is the magnitude of the improvement (if any)? How can this study be improved?

Write a report that adheres to the Written Assignment Requirements under the heading “Expectations for CSU-Global Written Assignments” found in the CSU-Global Guide to Writing and APA Requirements. As with all written assignments at CSU-Global, you should have in-text citations and a reference page. An example paper is provided in the *MTH410 Guide to Writing with Statistics*.

Submit your Excel file in addition to your report.

Requirements:

1. Paper must be written in third person.
2. Your paper should be four to five pages in length (counting the title page and references page) and cite and integrate at least one credible outside source. The CSU-Global Library is a great place to find resources.
3. Include a title page, introduction, body, conclusion, and a reference page.
4. The introduction should describe or summarize the topic or problem. It might discuss the importance of the topic or how it affects you or society as a whole, or it might discuss or describe the unique terminology associated with the topic.
5. The body of your paper should answer the questions posed in the problem. Explain how you approached and answered the question or solved the problem, and, for each question, show all steps involved. Be sure this is in paragraph format, not numbered answers like a homework assignment.
6. The conclusion should summarize your thoughts about what you have determined from the data and your analysis, often with a broader personal or societal perspective in mind. Nothing new should be introduced in the conclusion that was not previously discussed in the body paragraphs.
7. Include any tables of data or calculations, calculated values, and/or graphs associated with this problem in the body of your assignment.
8. Document formatting, citations, and style should conform to the CSU-Global Virtual Library CSU-Global Guide to Writing and APA: Introduction. A short summary containing much that you need to know about paper formatting, citations, and references is contained in the New Sample APA Paper. In addition, information in the CSU-Global Virtual Library under the Writing Center/APA Resources tab has many helpful areas (Writing Center, Writing Tips, Template & Examples/Papers & Essays, and others).

Mastery Exercise (15 points)

Module 7

Readings

- Chapters 10, 12, 13.1, & 13.2 in *Essentials of Statistics for Business and Economics*

Opening Exercise (0 points)

Discussion (25 points)

Mastery Exercise (15 points)

Live Classroom (0 points)

Module 8

Readings

- Chapter 14 in *Essentials of Statistics for Business and Economics*

Opening Exercise (0 points)

Discussion (25 points)

Mastery Exercise (15 points)

Final Exam (200 points)

SAMPLE

COURSE POLICIES

Grading Scale	
A	95.0 – 100
A-	90.0 – 94.9
B+	86.7 – 89.9
B	83.3 – 86.6
B-	80.0 – 83.2
C+	75.0 – 79.9
C	70.0 – 74.9
D	60.0 – 69.9
F	59.9 or below

Course Grading

20%	Discussion Participation
0%	Opening Exercises
12%	Mastery Exercises
34%	Critical Thinking Assignments
14%	Midterm Exam
20%	Final Exam
0%	Live Classroom

IN-CLASSROOM POLICIES

For information on late work and incomplete grade policies, please refer to our [In-Classroom Student Policies and Guidelines](#) or the Academic Catalog for comprehensive documentation of CSU-Global institutional policies.

Academic Integrity

Students must assume responsibility for maintaining honesty in all work submitted for credit and in any other work designated by the instructor of the course. Academic dishonesty includes cheating, fabrication, facilitating academic dishonesty, plagiarism, reusing /re-purposing your own work (see *CSU-Global Guide to Writing and APA Requirements* for percentage of repurposed work that can be used in an assignment), unauthorized possession of academic materials, and unauthorized collaboration. The CSU-Global Library provides information on how students can avoid plagiarism by understanding what it is and how to use the Library and Internet resources.

Citing Sources with APA Style

All students are expected to follow the *CSU-Global Guide to Writing and APA Requirements* when citing in APA (based on the APA Style Manual, 6th edition) for all assignments. For details on CSU-Global APA style, please review the APA resources within the CSU-Global Library under the “APA Guide & Resources” link. A link to this document should also be provided within most assignment descriptions in your course.

Disability Services Statement

CSU–Global is committed to providing reasonable accommodations for all persons with disabilities. Any student with a documented disability requesting academic accommodations should contact the Disability Resource Coordinator at 720-279-0650 and/or email ada@CSUGlobal.edu for additional information to coordinate reasonable accommodations for students with documented disabilities.

Netiquette

Respect the diversity of opinions among the instructor and classmates and engage with them in a courteous, respectful, and professional manner. All posts and classroom communication must be conducted in accordance with the student code of conduct. Think before you push the Send button. Did you say just what you meant? How will the person on the other end read the words?

Maintain an environment free of harassment, stalking, threats, abuse, insults or humiliation toward the instructor and classmates. This includes, but is not limited to, demeaning written or oral comments of an ethnic, religious, age, disability, sexist (or sexual orientation), or racist nature; and the unwanted sexual advances or intimidations by email, or on discussion boards and other postings within or connected to the online classroom. If you have concerns about something that has been said, please let your instructor know.